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SWEET BRIAR COLLEGE



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Dedication
of the
CONNIE M. GUION
SCIENCE BUILDING



Bulletin of Sweet Briar College—July 1966

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CONNIE M. GUION
SCIENCE BUILDING

SWEET BRIAR COLLEGE
APRIL 22-23, 1966

Program

FRIDAY, APRIL 22

- 3 to 5 p. m. Tours of Connie M. Guion Science Building
- 8:00 p. m. Introduction. PRESIDENT ANNE GARY PANNELL
Mary Reynolds Babcock Auditorium
- Dedicatory Address: *SCIENCE and LIBERAL EDUCATION*
BENTLEY GLASS, Academic Vice President
State University of New York at Stony Brook
- Reception: Guion Science Building

SATURDAY, APRIL 23

- 9:30 a. m. Introduction. DEAN CATHERINE S. SIMS
Mary Reynolds Babcock Auditorium
- THE SUN — STAR of INTERNATIONAL PROGRAMS*
HELEN DODSON PRINCE, Associate Director,
McMath-Hulbert Observatory, University of Michigan
- Coffee
- 11:00 a. m. *SCIENCE and UNCOMMON SENSE*
HENRY GUERLAC, Professor of the History of Science
Cornell University
- Luncheon
- 2 to 4 p. m. Tours of the Connie M. Guion Science Building

Introduction

Tonight is a time for rejoicing. The Connie M. Guion Science Building which we dedicate here tonight has been a long time in the making—since 1908, in fact, when Connie M. Guion came as a lively young woman, a recent Wellesley graduate, to teach chemistry and physics at Sweet Briar . . .

Connie Guion is the embodiment of that pioneer spirit which imbued this College with the will to go forward, often against the greatest odds, to attain a place in the educational world of which we can all be justly proud.

Her guiding spirit has touched the life of Sweet Briar in countless ways. She organized the first dramatic group, the "Merry Jesters," forerunner of Paint and Patches; she was active in setting up the athletic program; she set up the first Book Shop in 1909 in a room in Academic (now Benedict) and when she left Sweet Briar in 1913 to begin her medical education at Cornell Medical College, she handed President Benedict a check for \$16,000, profits from the Book Shop, which President Benedict wisely set up in a scholarship fund.

Going on to a medical career and a life of service to others, . . . Dr. Guion has never lost her interest in this College and its welfare. She was a leader in the successful campaign to establish the Mary Kendrick Benedict Scholarship in 1945. She joined the Board of Overseers in 1950 and



Lynchburg News photo

President Pannell and Dr. Guion

was named a life member of our Board of Directors in 1956. From 1954 to 1962 she served as Chairman of the Board's Development Committee, with responsibility for directing both the Fiftieth Anniversary campaign and the subsequent program of annual giving . . .

Dr. Connie has been a fine example of a woman scientist. In an era when women tended to be feminists at the expense of their femininity, she retained the gentleness, humanity, warmth, charm, generosity and traditions of a lady. She has attained a position in her profession which could well be the envy of many men in medicine and has made countless contributions to science through her teaching . . . her bio-chemical research, and her successful medical practice.

Although she has spent the major part of her life as a physician and teacher of medicine in New York, Sweet Briar wishes tonight to emphasize her contributions to the education of women in the south. Her early difficulties in obtaining an education in her native North Carolina in the aftermath of the Civil War were not forgotten by Dr. Connie. Although she completed her education in the north and became a resident of New York City, she remembered and cherished her southern background. Her contributions to Sweet Briar College as a teacher, a trustee and a benefactor have served admirably to improve educational opportunities for women in the south.

Dr. Connie believes firmly in the education of women and her life epitomizes this belief. She stands as an ideal of the goal toward which every

woman must aspire — to educate herself to the limit of her abilities and contribute her talents to the betterment of society wherever she finds herself.

Her belief in the education of women and her faith in the future of Sweet Briar College are enshrined in this functional building — the Connie M. Guion Science Building — dedicated in her honour. Our respect, our admiration, our gratitude and our deep affection for Dr. Connie have here taken form and substance. May the inspiration which she has given to so many in a life rich in its concern for others permeate the lives of all who enter its doors, now and in the future.

Anne Gary Pannell

SCIENCE and LIBERAL EDUCATION



Lynchburg News photo

Research scientist and authority on human genetics, teacher, writer, man of many interests, Dr. Bentley Glass is the first Distinguished Professor of Biology of the State University of New York at Stony Brook. His goal: to educate laymen in the questing spirit of science and to remind scientists of their social responsibility.

Bentley Glass artfully put an absorbed audience in position to focus through his unique binoculars, science and humanism, on man's predicament resulting from explosions in science, in numbers of scientists, in population, and from the dizzying tempo of change in all areas. He illustrated his ideas from his rich background in genetics, particularly human heredity. Like others of his generation he has lived through most of the lifetime of this young but burgeoning discipline; he has seen and often helped plant the milestones in its progress.

Dr. Glass made the tempo of scientific expansion startlingly clear by noting that 90% of all scientists who have ever lived are alive today, and that teachers, recognizing the speed with which scientific ideas become obsolete, are constantly having to be re-educated. Dramatizing the speed of change in biology, he contrasted textbooks of 1900 and 1930, the former

bearing no reference to features prominent in the latter, such as Mendel, genes, the Chromosome Theory of Heredity, viruses, and vitamins. The 1966 textbook, reflecting achievements almost undreamed of in 1930, speaks in a new language of ATP, DNA, and the latter's role in coding the sequence of amino acids in protein molecules.

Drawing on his own wide experience, Dr. Glass predicted that by 1980 man's condition *vis a vis* his environment will be radically altered by such achievements as full understanding of photosynthesis and correction of inborn errors of metabolism; by 1980 man will be in more effective control of his own numbers, and will

be consciously manipulating his own evolution, even to the point of using stored sperm and transplanted fetuses from genetically favored donors.

With a warning that technology derived from genetics, like all technology, contains the double promise of boon and curse, liberation and destruction, Dr. Glass summed up his address by stating that education, to be liberal, must put science at its core, and must insure such understanding by all that wisdom will govern the application of science to human affairs.

*Summary by Jane C. Belcher
Professor of Biology*

Gene Campbell photo



The SUN — STAR of INTERNATIONAL PROGRAMS

by HELEN DODSON PRINCE

PROFESSOR OF ASTRONOMY; ASSOCIATE DIRECTOR,
MCMATH-HULBERT OBSERVATORY, UNIVERSITY OF MICHIGAN

Eight years ago it was my privilege to participate in the Sweet Briar Symposium on Modern Science and Human Values. For me, it is difficult to realize that you are not the same students that I met at that time, but you are not; you are two college generations removed from those of us who assembled in the college gymnasium and discussed together some of the implications of the role of science in the then rapidly developing "space age." The presence today of the splendid new Connie M. Guion Science Building is proof enough that much time has passed since that earlier symposium.

The dedication of the Guion Science Building is the culmination of great effort on the part of those who have sought for Sweet Briar College the proper environment for students in these years so dominated by scientific programs. It is also an occasion of great rejoicing by those who realize that within the Guion Science Building, students who are deeply aware of the meaning of the liberal arts and the humanities will bring to science their special gifts, and will see in science not

only the facts and formulae, but also the significance of its theories and developments. For me, it is a very great pleasure to be at Sweet Briar this weekend and to be able to take part in the dedication ceremonies.

Eight years ago I chose for my subject, "The International Geophysical Year — A Great Human Adventure." In 1958 solar astronomers along with more than 10,000 other scientists from sixty-seven nations had just embarked on a vast international, cooperative, geophysical program. It was known as the International Geophysical Year, or IGY. Since then a second great geophysical program, the International Years of the Quiet Sun, or IQSY, has taken place. It is the story of these two vast geophysical projects that I would like to consider with you today.

Geophysics is the science that attempts to understand the physics of the earth as a whole and as a planet in space. It is an old science and by its very nature, invites international cooperation. Early efforts to further geophysical understand-

ing have been the International Polar Year of 1882, and the Second International Polar Year, 1932. I consider it of special interest that the IGY, of 1957-58, was planned in the midst of the political tensions of the 1950's and was carried out during the somewhat rugged times of the early "sputnik era." In 1958 I closed my talk by suggesting that if the IGY could indeed be conducted in a spirit of cooperation and good will it might not only add to the knowledge of the planet on which we live, but it might also make a real contribution to the understanding of the ways the peoples of the earth can act and work together. I think it can now be said that there were no serious departures from real international cooperation to mar the fine spirit in which the programs of the International Geophysical Year were conceived.

Eight years ago there was no thought that the International Geophysical Year would lead quickly to other international geophysical programs, but that is what has happened. It was a bit like a successful Broadway production. The show was not allowed to close on schedule; the season was extended by instituting first a program that was called, "International Geophysical Cooperation, 1959." Then in just another five years, an entirely new "production" was introduced, the International Years of the Quiet Sun. The programs and the purposes of these geo-

physical projects remained basically the same, but the sun, which is the star that dominates the cosmic environment of the earth and determines many of its physical properties, was different in each case.

In 1957-58, during the IGY, the sun was active and the earth was subjected to an almost continually changing background of high energy solar radiation and particle emission. During the IQSY, in 1964-65, the sun was a calmer star and geophysicists could make their measurements with less cosmic turmoil. For both of these programs, solar astronomers in observatories in all parts of the earth made special observations to assure an unbroken record of solar data as background information. Now that the programs are concluded, it is clear that it was the sun that was the real *Star* of both productions. During the International Geophysical Year the sun put on a performance unmatched in the past 350 years. The sunspot number, a measure of solar activity, reached a higher level than at any time since sunspot observations began in 1610. During the International Years of the Quiet Sun, our nearest star proved temperamental. During the minimum of 1964 the sun was not really quiet for the hoped-for long intervals of time, and there were fewer months of solar calm than during any other solar minimum for the last century.

SOLAR ACTIVITY

Although the sun is a star, and in many ways an average star, for those of us who live on the earth it is in certain respects unique. The sun is the only star sufficiently close to appear as anything but a point of light in even the largest telescopes. It is the only star whose surface can be seen directly, and the only star for which there is detailed information about surface phenomena or events that come and go in time intervals as short as months, days, and minutes. It is these transient solar features that constitute what is often referred to by the term "solar activity." The International Geophysical Year was an effort to study the earth-sun system when solar activity was present, and the International Years of the Quiet Sun was a similar undertaking for years when solar activity was expected to be limited or absent.

The most familiar aspect of solar activity is a sunspot. Sunspots can be observed with simple telescopes. They appear dark because they are less hot than the general solar disk and they are known to be the sites of strong magnetic fields.

Pictures of the sun made with radiation from either hydrogen or ionized calcium atoms show that sunspots occur in regions where these radiations are unusually strong. On such solar pictures, or spec-

troheliograms, the regions of enhanced hydrogen and calcium radiation appear bright and are usually referred to as the *plages*, a word used by the French to mean also a seashore or beach or "hot spot." The solar plage is the site of weak magnetic fields. It is apparently a more fundamental solar feature than a sunspot. The plage generally forms before the spot and lasts longer. There are many solar plages without spots, but I know of no sunspot without at least a minor plage in calcium radiation.

Within the portion of the solar disk delineated by the plage, there occur numerous other aspects of solar activity. The events called solar flares are generally observed as sudden, transient brightenings of portions of a plage. Enhanced X-radiation and radio frequency emission also occur in or above the plages. Elevated clouds, or prominences, are frequently seen in projection against the bright solar disk. Some prominences are quiescent, but others exhibit rapid motions. Occasionally prominence material is ejected from the sun with velocities at least as great as 1000 Km/sec.

The foregoing observations have led to the concept of the existence on the sun of localized "centers of activity." They range from minor features with just a small plage, or plage and spot, to great complex regions. A major cen-



Gene Campbell photo

Dr. Guerlac, Dr. Prince, Susan Sudduth, '66, Dean Sims

ter of activity often includes several spot groups within a very large plage, and is usually the site of many flares day after day, and frequent bursts of radio and X-radiation.

GEOPHYSICAL EFFECTS OF SOLAR ACTIVITY

Events that happen in a center of activity on the sun are thought to have direct influence on certain aspects of the physical nature of the earth as a whole.

The earth is affected by two types of solar phenomena: first, by changes in the quantity and wave length of emitted electromagnetic radiation, and secondly by increased emission of solar particles. The formation of centers of activity and the occurrence of flares within the center of activity are the solar phenomena most obviously associated with terrestrial effects. With both of these solar events there is such a marked increase in the ultraviolet and X-radiation from the sun that the earth's ionosphere is modified.

Solar X-radiation cannot be observed from the base of the earth's atmosphere but observations from rockets and satellites have now made it clear that solar X-radiation is strongly concentrated in the plages and is greatly enhanced at the time of a flare.

It is now known that the sun is losing particles at all times. This emission of solar material is often referred to as the "blowing of the solar wind." The earth and the other planets are at all times enveloped in the solar wind, and the earth undergoes certain changes when the solar "wind" blows especially vigorously. The general relationships between observed solar phenomena and variations in the solar wind are not well understood. However, it does seem established that at the time of certain flares, large quantities of solar particles are ejected from the sun with energies so great that they reach the earth in a few hours, or a few days, and cause a series of phenomena ranging from geomagnetic storms and aurorae to the enhancements of cosmic rays. The emission of high energy protons at the time of these flares is thought to constitute a cosmic hazard for men beyond the earth's atmosphere who venture outside the shielding of their space vehicles.

The great proton producing flares were among the most spectacular solar events of the last solar maximum and solar astronomers, worldwide, shared many

observations in efforts to understand their nature. These were the phenomena taking place during solar maximum and the International Geophysical Years 1957-1959. Since they affected significantly certain of the physical properties of the earth, and the space between the sun and the earth, another complementary program of geophysical study was needed for a time when the sun would be a quieter star.

MEANING OF SOLAR MINIMUM

Fortunately, solar activity follows a reasonably repetitive pattern and varies in an approximately 11-year cycle. The individual cycles have ranged in duration from nine to fourteen years. Although the decision to conduct a second international cooperative program of solar and geophysical studies when, hopefully, the sun would be quiet, had to be made far in advance, the years chosen for the program, 1964-65, did indeed include the minimum between solar cycles 19 and 20. But it was a rather peculiar minimum. In my judgment the cosmic star of the program was somewhat less cooperative than the worldwide investigators who were trying to study it.

The great 11-year cyclic variation of solar activity as represented by spots and plages is not a simple increase and decrease in the numbers of centers of ac-

tivity on the sun. There is a pattern or course of development which gives to each cycle a seeming entity, and leads one to think of the successive solar cycles as a series of events in the life of the sun. Successive solar cycles do not form a simple sequence in time. They overlap. Activity characteristic of a new cycle begins before activity of the old cycle has ceased.

The early phase of each cycle is marked by the outbreak of spots and plages at high solar latitudes. As the cycle advances, regions form at successively lower latitudes, until in the closing phase, the spots are close to the solar equator. While the low latitude regions of the old cycle are still forming, new cycle regions begin to appear at high latitudes. Thus, the years around solar minimum are characterized by a complex mixture of old and new cycle phenomena.

"Solar minimum" occurs when the combined activity from the dying old cycle and the developing new cycle is least. Furthermore, the level of residual "activity" at minimum will be high if new-cycle activity becomes established before old-cycle activity has dropped to a truly low value. This is exactly what happened in the years 1963-1965 and because of it analyses of certain of the IQSY programs may be obliged to take into consideration the residual activity of the supposedly quiet sun.

MINIMUM OF 1965

All of the standard measurements of solar activity indicate that the minimum between solar cycles 19 and 20 occurred in the late summer and early autumn of 1964, but it was a minimum without long intervals of solar quiet and with a relatively small number of spotless days. There were far fewer spotless days in the years centered on the 1964 minimum than in the years around each of the four preceding minima. Furthermore, according to the Zurich sunspot numbers there were fewer months with very low values of the sunspot count than for any other solar minimum in the last century. During the International Years of the Quiet Sun there were intervals of true solar quiet, but they were not abundant. According to various criteria, July 26, 1964, was the quietest day.

During the years of relative solar quiet, disturbances of the earth's magnetic field indicated that the solar wind continued to blow even in the absence of obvious centers of activity on the solar disk. The sun rotates in an interval of approximately 27 days, as seen from the earth. Something on the sun that is the source of the solar wind rotated with it, and during the quiet phase of the solar cycle, geomagnetic storms tended to recur with the same 27-day cadence.

Under the careful scrutiny of the investigators of IQSY, the activity of the new solar cycle was launched, and cycle 20 is now well advanced. Once again, the sun is providing a situation of considerable interest. Up to the present time, activity of solar cycle 20 has been almost exclusively in the northern hemisphere. Marked asymmetries in activity between the northern and southern hemispheres of the sun have happened in the past. However, according to our evaluation of the data, the asymmetry in the development of cycle 20 is greater than that shown at the onset of any other cycle in the preceding 100 years.

The asymmetry shown by spots and plages appears also in the measurements of the green coronal intensity. For example, in June, 1965, the intensity of the corona, the sun's outer atmosphere, was much stronger in the northern than in the southern hemisphere. Apparently during IQSY and at the present time, the sun is a truly unsymmetrical star.

Finally, there occurred during the last months of the International Years of the Quiet Sun a phenomenon of great rarity, arranged not by man but by the course of astronomical circumstances. There appeared in the sky a comet, called Comet Ikeya-Seki in honor of its two Japanese discoverers. This comet was unusual because its orbit was such that the comet passed very close to the sun at

the time of perihelion. In fact, it was so close that it was possible to record both the sun and the comet in the same photograph. Neither the sun nor the comet seems to have suffered because of this close encounter. It is probable that the principal contribution of this unexpected celestial "experiment" during IQSY was in the delight it brought to those who saw it.

CONCLUSION

I have tried to describe for you how the sun from 1957 and into 1966 has been playing the principal role in major international scientific programs. As a solar astronomer during these years it was my great privilege to watch day after day the rise and fall of solar activity and the interplay between events on the sun and their consequences on the earth. How I wish I could in some way share with you this direct experience with things that are happening, and are real, in the great physical universe of which we are a part! My experiences have been with a star, but I am sure they can be matched, in kind, by trying to understand the intricacies of a living cell until you feel you almost know it; or by working with atomic or nuclear particles until their complexities have diminished and you stand in wonder before the slow unfolding of still poorly understood relationships. It is this kind

of experience that I challenge you to seek within the disciplines housed in your new science building which was dedicated last night.

Do not confuse science with technology, valuable though the latter may be. Science is primarily a search for truth, characterized by a method, and demanding the highest level of creativity. At its boundaries are the inscrutable problems of the beginning of time, the limits of space, and the meaning of life, and mind, worthy companions to the ultimate problems from other disciplines, the nature of beauty, the problem of suffering, the distinction between that which is right and that which is wrong.

These are not new problems; they have concerned men and women for centuries. They have called forth the deepest sense of wonder and humility. The true significance of fundamental matters can seldom be described in terms that have direct and simple meaning. We can do but little more than express by some outward and visible act the inner vision, or joy, or ideal that has possessed us. Sometimes when there has been a bit of special insight in solar matters there is at least one

solar astronomer who finds herself singing, more lustily than well, the hymnbook version of Psalm 103:

*Praise my soul the King of Heaven;
To His feet thy tribute bring;
Ransomed, healed, restored, forgiven,
Evermore His praises sing:
Alleluia! Alleluia!
Praise the everlasting King.*

*Angels, help us to adore Him;
Ye behold Him face to face;
Sun and moon, bow down before Him,
Dwellers all in time and space.
Alleluia! Alleluia!
Praise with us the God of grace.*

The sun is a star, self-luminous and vast. In spite of rockets and satellites and super computers, when confronted with a star, one can only stand in awe and humbly observe with utmost ingenuity the varied aspects of this member of the great physical cosmos, as they are presented to us, in the sun's own time and in the sun's own way. The astronomer and geophysicist, along with all other scientists, can only hope that the observations he is able to make will be interpreted with wisdom and in truth.



Gene Campbell photo

Scientist and humanist, trained in chemistry, biochemistry, and European history, Dr. Henry Guerlac is internationally recognized as an authority in the history of science, which he has been teaching at Cornell University since 1946. He participated, as did Dr. Prince, in Sweet Briar's 1958 symposium on *Modern Science and Human Values*.

SCIENCE and UNCOMMON SENSE

As a preface to his address, Professor Guerlac began by saying, "I am particularly honored to bring the good wishes of Cornell on the occasion of the dedication of the Connie M. Guion Science Building. You know, of course, that we consider Dr. Guion a Cornellian. She received her M.A. in Ithaca, and her M.D. at the Cornell Medical School.

"Among the graduate alumni — and I use the masculine form on purpose — she is one of whom we are rightfully and especially proud.

"The new building we are dedicating is the second structure to be named in honor of Dr. Guion; the other is a wing of the New York Hospital associated with our medical school where she has worked and taught with distinction for many years.

"This building, however, interests me more," he continued. "It is so full of promise and expectation. What will be taught in it? To what sort of student? And how will it be taught?"

"The last two questions interest me particularly. Committed students of science, destined to move on to graduate school, will spend long hours, and profitable ones, in the lecture rooms and laboratories of the handsome building across the street. How broadly will they understand science? What will they know of science besides their own specialty? In any event, I envy their opportunity and the excitement that is in store for them.

"But there will be others. Surely the majority of young women who pass through the doors of the Guion laboratories will not be future scientists. Their main intellectual interests will be in literature, or art, or history, or politics — or perhaps just in life itself. It is these Dr. Glass had in mind when he pleaded for science as part of a liberal curriculum. What will they make of their brief exposure to science? Can they be brought to appreciate the spirit and the intellectual demands of science? Will they learn something of its history? And last of all, can they — with scanty mathematics and with little skill in the higher forms of abstract reasoning — gain any insight into the shadowy realms of modern science?"

Dr. Guerlac spoke persuasively of the need to relate science, at least in some measure, to man's every-day experience. He asserted that the difficulties of communication between the scientist and the layman are greater today than in the



Martha von Briesen photo

eighteenth and nineteenth centuries when scientific studies were based primarily on phenomena which could be observed by the normal human senses. Most educated persons of two centuries ago were acquainted with the principal contemporary scientific discoveries and seemed to feel that scientific knowledge was common knowledge in the world at that time.

Even then, however, science was much more than "systematized common sense" as Thomas Huxley described it over one hundred years ago, and today it is much more nearly "systematized *uncommon* sense."

"It is precisely the *uncommonness* of much scientific thinking, its remoteness from common experience, that raises the question of communication: communication between the science teacher and his students, between the research scientist on the one hand and the humanist, the layman, on the other," according to Dr. Guerlac.

This widened gap, he pointed out, has been brought about gradually by a progressively greater reductionism, in which scientists attempt to explain each level of structure or organization by analyzing it and studying each of the components at a lower level.

Speaking principally of biologists, Dr. Guerlac noted that a generation ago some perceptive scientists were already classifying their colleagues as primarily interested in the concrete reality of natural objects which could be easily perceived, or conversely, as dealing almost entirely with theoretical considerations, mathematical formulae and the like. In his view, the schism was not quite as definite as is implied in this characterization, and most classical biologists were between the two extremes. By comparison, some modern molecular biologists are primarily physicists or chemists, carrying reductionism to the extreme and neglecting to relate biology to life itself.

Dr. Guerlac then spoke of the devel-

opment of physics, using a large crystal to illustrate our changing concepts of science. In earlier times, and yet not so long ago, the physicist would have been concerned primarily with making measurements of the crystal, weighing it, studying its capacity to reflect or transmit light, and studying its characteristics when it was experimentally altered in some way. This was directly related to man's own experience, perhaps organized a bit more concisely and observed with somewhat more sophistication than usual.

As the science of physics moved ahead it began to stress the analysis of lower levels of organization, which at first could at least be illustrated in terms of familiar objects, if not entirely explained in understandable terms. The atoms and molecules could be described as something like small bodies of matter floating about in space, and their components in turn could be described as little billiard balls rotating around each other somewhat in the manner of our solar system. But beyond this point further discoveries departed entirely from the realm of human experience, and man has found that ordinary concepts do not suffice and he must learn to accept complex mathematical formulae in place of anything tangible, and even in place of anything which can be effectively compared to what he knows in his everyday experience.

As Dr. Guerlac sees it, "there is a widespread failure of the scientist to communicate with the unconverted. It is easier to *talk* of strengthening the scientific component of a liberal arts curriculum than it is to *do* it effectively."

Believing that reductionism is carrying science farther and farther from the layman, Dr. Guerlac offers a concrete solution to the problems thus engendered. He argues that science can be most effectively communicated to the non-scientist by beginning with the concrete and the higher levels of organization which are a part of everyone's experience, and work-

ing down to successively lower levels as necessary. Rather than commencing with tiny sub-atomic particles and energy-packets and working up finally to the perceptible living world, Dr. Guerlac believes that scientific study should first be related to human experience, and then be subjected to analysis of its parts at successively lower levels, in somewhat the way science itself has developed through the last two or three centuries.

*Summary by Ernest P. Edwards
Professor of Biology*



Gene Campbell photo

Mrs. Horton, Mrs. Burnett, Dr. Guion

A portrait of Dr. Guion, now gracing the entrance hall of the Guion Science Building, was presented to the College during the dedication program by Eugenia *Griffin* Burnett, representing the alumnae who contributed to this gift. Gladys *Wester* Horton, member of the Board of Directors, was instrumental in arranging for the portrait, which is a copy by Molly Guion of the likeness she painted several years ago for the New York Hospital.



1908 — And gladly teach — 1966



Martha von Briesen photo

